**Mathematics D: Data Analysis**

**Basic Graphing**

**Idaho Content Standards- Science (ICSS):**

* n/a

**Math Common Core State Standards (Math-CCSS):**

* 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

**Next Generation Science Standards (NGSS):**

* n/a

**English Language Arts Common Core State Standards (ELA-CCSS):**

* RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words.
* RF.5.4 Read with sufficient accuracy and fluency to support comprehension.
* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

**Warm Ups and Cool Downs**

**ICSS:**

* PS1-MS-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
* PS1-5-4. Conduct an investigation to determine whether the mixing of two or more substances will result in new substances.

**Math-CCSS:**

* 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.
* 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
* 5.NBT.B.6 Find whole-number quotients of whole-numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

**NGSS:**

* MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
* 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraint on materials, time, or cost.
* 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances will result in new substances.

**ELA-CCSS:**

* RF.5.3 Know and apply grade-level phonics and word analysis skills in decoding words.
* RF.5.3.A Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
* RF.5.4 Read with sufficient accuracy and fluency to support comprehension.
* RF.5.4.A Read on-level text with purpose and understanding.
* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
* SL.5.4 Report on a topic or text or present an opinion sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
* L.5.4 Determine or clarify the meaning of unknown and multiple-meaning words, and phrases choosing flexibly from a range of strategies.
* L.5.4.B Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).

**Rocket Launch (Data Analysis)**

**ICSS:**

* PS2-MS-2. Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.
* PS2-5-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.

**Math-CCSS:**

* 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.
* 6.SP.B.5.B Summarize numerical data sets in relation to their context; describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

**NGSS:**

* MS-PS2-2. Plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.
* 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.

**ELA-CCSS:**

* SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-lead) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
* SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.
* SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
* SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
* SL.5.4 Report on a topic or text or present an opinion sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
* L.5.4 Determine or clarify the meaning of unknown and multiple-meaning words, and phrases choosing flexibly from a range of strategies.